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ORIGINAL ARTICLES.

A CASE OF PANOPHTHALMITIS SUPPURATIVA FOLLOWING DISCISSION OF A CAPSULAR OPACITY.[1]

BY SAMUEL THEOBALD, M.D.,

Ophthalmic and Aural Surgeon to the Johns Hopkins Hospital, and to the Baltimore Eye, Ear and Throat Charity Hospital.

Absolute asepsis in eye operations is something that we may aim at, but shall never probably completely attain. If, as has been proven, it is impossible, by any amount of scrubbing and application of germicidal agents to rid the *skin* entirely of septic organisms, it is hardly to be expected that we should meet with better success in dealing with the conjunctival sac. Indeed, in most respects, the conditions are much less favorable for obtaining asepsis of the conjunctiva than of the skin, for the antiseptic solutions which are permissible are many times weaker and the mechanical means which may be employed much less efficacious.

[1]A paper read before the American Ophthalmological Society at Washington, May 30, 1894.

On the other hand, it is undoubtedly true that, in some way which we do not as yet fully understand, Nature assists us in our operative work upon the eye, so that with comparatively imperfect antiseptic precautions we obtain far better results than might, *a priori*, be expected. Consider, for example, the difference in the behavior of stitches in the skin and in the conjunctiva or in the external eye muscles. In the skin, stitch abscesses are of frequent occurrences, in spite of the most rigid antiseptic measures; in the conjunctiva and eye muscles, on the other hand, even in the absence of all antiseptic precautions they are almost unknown.

It is evident that the organisms which induce suppuration do not, as a rule, find in the conjunctival sac conditions which are favorable to their development, and the comparative immunity from infection which we enjoy in our eye surgery is, in all probability, due in a greater measure to this fact than to the, at best, imperfect antiseptic measures which we all, at the present day, feel it incumbent upon us to employ.

The antiseptic precautions which I practice in all operations involving penetration of the globe, such as iridectomy, cataract extraction, discission, etc., and which were used in the case I am about to relate, I recognize, are by no means perfect, yet, for practical purposes, they seem to me to be as good as those in general vogue: the conjunctival sac is flushed repeatedly with a 1 to 8000 sublimate solution (the flushing being begun, when practicable, several hours before the time for the operation) and the lids are washed with the same solution, a pad of absorbent cotton wet with it being also applied over the closed lids. The cocaine solution contains 4% of boracic acid, and the particular solution employed for major operations is not used for any other purpose.

Just before being used, all instruments, or rather those parts of them that are likely to come in contact with the eye, such as the blades of knives, scissors, forceps, etc., are sterilized by being immersed in boiling water, and at the same time are washed clean with a bit of absorbent cotton, which has been boiled in the water, and which is held for the purpose with the

fixation forceps. After being so treated, the instruments are not laid in an antiseptic solution, but are simply so placed, or held, that their sterilized parts shall not come in contact with any other object. The operator's hands are simply washed clean with warm water and soap. To cleanse the eye during and after the operation a 1 to 8000 sublimate solution is employed and a bit of new sponge or absorbent cotton.

The case of suppurative panophthalmitis following discission which I wish to bring to the notice of the Society occurred in a negro boy, Harry B., aged 14, whose physiognomy was characteristic of inherited syphilis. He had had in each eye a soft cataract, probably congenital, with attendant nystagmus. By repeated needlings, the left eye being operated upon first, and none of the operations having been attended by unusual inflammatory reaction, I had brought about the absorption of both lenses, and had restored fairly good vision (the retina being, probably, imperfectly developed) in the left eye. The relative poor vision of the right eye seemed to be dependent upon some remaining capsular opacity, and it was to get rid of this that I determined upon the needling which resulted so disastrously.

The operation was a thoroughly satisfactory one, a good rent being easily torn in the opaque membrane, without undue traction. Previous to the needling the pupil was dilated by atropia, the solution of which contained 1% of boracic acid; the eye was flushed with 1 to 8000 sublimate solution in the manner I have described, except that the flushings were begun only a short time before the operation, as the patient had just come from his home, and a solution containing 4% each of cocaine and boracic acid was instilled. The only instruments used were a speculum, which was thoroughly boiled, a cataract needle and fixation forceps. The two latter instruments were sterilized and washed in boiling water in the manner I have described. No sponging of the eye, of course, was required, so that nothing came in contact with it except the sterilized instruments just mentioned. As soon as the operation was completed the patient was made to close the eye,

and over the lids a compress, wet with a solution of opium and boracic, was applied, this being the dressing which I have invariably employed in such cases for years. I did not see the patient on the following day, but on the morning of the next day word was sent me that the case was not doing well, and when I examined the eye early in the afternoon, about forty-seven hours from the time of the operation, the whole of the cornea was in a necrotic condition, there was excessive chemosis of the conjunctiva, and it was evident that the eye was doomed beyond peradventure.

As the patient did not suffer much pain, the question of enucleation was allowed to remain in abeyance, and, after a tedious convalescence, he left the hospital with a smooth, partly atrophied bulb, which for him was better than an empty socket.

What is the most probable explanation of the untoward result which occurred in this case, is a question to which I have not been able to find a satisfactory answer. That a diminished vitality and resisting power in the fluids and cells of the body, due to the inheritance of syphilis, was an important factor in determining the result is altogether probable, and we should, moreover, not lose sight of the fact that, especially in such a subject, auto infection may have been the cause of the whole trouble.

CAN ALBUMINURIC RETINITIS IN PREGNANCY BE PREVENTED?

BY R. L. CULBERTSON, M.D., ZANESVILLE, OHIO,

Oculist to City Hospital; U. S. Pension Bureau; C. & M. V. and B. Z. & C. Railways, etc.

Before discussing this subject, I will first state the progress of the case reported by me in the May number of this Journal. Six weeks after delivery I gave digitalis for a few days as an experiment, with the immediate result of greatly increasing the albumen and tube casts. Before giving digitalis, the albumen was one-eighth by volume; after giving, it was one-third. I at once stopped digitalis and put her on $^1/_{20}$ grain bi-chloride of gold, and strychnia $^1/_{20}$ grain. The combination of these drugs made her very hysterical; the strychnia was discontinued and the hysterical symptoms at once disappeared. Under this treatment her skin, which had been very harsh and dry, became moist, and the ashy paleness of the face, peculiar to Bright's disease began to disappear and her spirits, which had been greatly depressed, changed from despondency to cheerfulness. Within a week the albumen had diminished to one-eighth and in another week to one-tenth with considerable improvement in vision; about this time her menses came on and after this there was still greater improvement in vision. After taking the gold for a month, the albumen had diminished to one-fifteenth and there have been no tube casts in the urine for a month, although there is still considerable renal epithelium. Her skin is very active. Ten weeks after delivery the ophthalmoscope showed the following condition: R. E. media normal; the disc is very pale and shows marked atro-

phic cupping; the retinal haze has disappeared; the arteries and veins both on the disc and in the stroma are greatly diminished in size (to the third (?) degree); the arteries show the characteristic white line found in many cases of Bright's disease, and due to hypertrophy and degeneration of the muscular walls of the vessels. There was no hæmorrhagic spot in the retina but the pearly white spots of fatty degeneration were scattered all through the retina, particularly in the posterior pole. The L. E. showed a slight haze about the disc, which was very white but did not show any atrophic cupping. The veins were normal in size; while the arteries were somewhat larger than normal, due, no doubt, to the dilatation caused by the bi-chloride of gold, and did not show the white line along their walls. While the retina had suffered severely from fatty degeneration, the macula was intact. Remote vision, R. E.=$^{1}/_{LX}$ Sn. L. E.=$^{4}/_{V}$+; proximal vision, R. E. = $^{0}/_{XXX}$ Sn., L. E.=$^{6}/_{XXX}$ Sn., which is normal. Eleven weeks after delivery she commenced to take $^{1}/_{100}$ grain doses of trinitrin (nitro-glycerine) three times daily and I soon increased the dose to $^{1}/_{50}$ grain. After taking trinitrin for one week the albumen is diminished to $^{1}/_{20}$. The vision of R. E. has improved from $^{1}/_{LX}$ to $^{4}/_{LX}$ Sn. Proximal vision R. E.=$^{4}/_{XX}$ Sn.

ETIOLOGY.—J. H. Wilson,[1] quoting Dr. Hofmeier, says that there were 137 cases of nephritis complicating pregnancy, out of a total of 5000 deliveries. Dr. Wilson[2] also says that heredity enters largely into the etiology, and cites cases.

Dr. F. A. Mahomed[3] says, "that albuminuria in pregnant women is due to the great increase of excrementitious material in the blood, and the organs of secretion have to do increased work." Prof. Halbertsma[4], of Utrecht, says: "Albuminuria in pregnant women was specially observed when there was want of proportion between the gravid uterus and the abdomi-

[1]Transaction Ninth International Medical Congress.

[2]Ibid.

[3]American Journal Medical Sciences, 1875.

[4]British Medical Journal, 1884.

nal cavity. The cause of albuminuria in pregnant women was, in the greater number of cases, tension and compression of the uterus."

Dr. Fordyce Barker[5] says: "I express my conviction, based on my experience and observation, that in nine cases out of ten, in private practice, where albuminuria is found in pregnant and parturient women, the structural lesions of the kidney, which can be properly designated as Bright's disease, did not exist previous to pregnancy; and even in hospital practice, where the organic changes exist in a large proportion of cases, it is my belief, after a careful review of my experience, that the assertion I have just made is true in seven out of ten cases. Formerly I believed more fully than now in the mechanical theory, first suggested, I think, by Dr. Cormac, that in a large proportion of cases it was the result of venous congestion, caused by the pressure of the gravid uterus on the emulgent veins of the kidney."

The theory accepted by the majority of writers is that albuminuria in pregnancy is due to the diminished calibre of the arterioles,—hence, dry skin—and enormous increase of blood-pressure in the kidneys. Whether the blood pressure was abnormally increased by pregnancy or whether it existed before the first pregnancy and was only augmented by gestation, is not shown by any author, so far as I can learn. The case I reported, complained of flashes of heat and great nervousness at times before she became pregnant, and also micturated several times at night. These are undoubted signs of the heightened arterial tension, pathognomonic of Bright's disease.

The kidneys are sometimes slightly affected by colds, scarlatina, fevers, etc., but perfom their functions properly until the woman becomes pregnant, when the extra work thrown on them causes them to fail to perform their work.

Dr. Johnson[6] says "that sea-bathing is a common prim cause of albuminuria." May not menstrual irregularities be a

[5]Medical Record, 1888.

[6]British Medical Journal, 1879.

primary cause of Bright's disease? May not vicarious menstruation be a cause?

DIAGNOSIS.—Albuminuria will be readily diagnosed by tests. But several authors have pointed out that uræmia may exist without albumen being present in the urine. The microscope in many cases will reveal tube-casts and renal epithelium. The patient will complain of a dimness of vision, or, if the optic nerve be seriously involved, will complain of seeing "flashes of light" before her or that "things look colored." Micturition will be frequent.

Dr. T. R. Pooley[1] says: (1) In all cases of pregnancy not only should examinations of the urine be systematically made, but the eye should be examined with the ophthalmoscope, since in a large proportion of cases where eye troubles exist, the patients make no complaint of disorders of vision. Frequently such troubles can be detected with the ophthalmoscope long before any disease of the kidney is shown in the urine. (2) In uræmic amaurosis without changes in the eye visible to the ophthalmoscope, even should the usual accompanying symptoms, such as dizziness, nausea, and threatened convulsions be absent, their supervention is soon to be anticipated; and the immediate induction of premature labor is indicated, without waiting until the life as well as the sight of the patient is in danger. (3) In neuro-retinitis the induction of premature labor is not only justifiable but demanded. In some instances it is called for even in the earlier months of pregnancy. (4) It is required in certain cases of eye trouble recurring in successive pregnancies."

The author desires particularly to point out the importance of examining the urine of *all* pregnant women, if possible, and to *examine the pulse and heart. Is the pulse tense and wiry?* Is there hypertrophy of left ventricle? *Is the second sound of the heart abnormally accentuated?* It would be well, if in doubt, to use the sphygmograph in these cases. Ascertain the family history. Has there been gout, calcareous degeneration of arteries, paralysis, Bright's disease, rheumatism or

[1] Journal American Medical Association, 1888.

American gout among ancestors? Or has the patient herself been subject to neuralgia, lithæmia, biliousness, flashes of heat, dryness of skin, frequent micturition, palpitation of the heart, despondency, nervousness, etc.? If she has been, you might suspect she would be a fit subject for albuminuria of pregnancy.

TREATMENT.—As to the advisability of premature labor, I have spoken in a previous article, but I will here quote McNamara[8] who says: "With reference to the sight, every week the confinement is postponed, after symptoms of rapidly advancing retinitis have declared themselves, the greater the risk of permanent loss of vision, for the destructive changes in the retina are apt to make sudden, frequently rapid, and irrecoverable strides in cases of this kind."

As to prophylaxis you will inquire into the family history, as I have before stated, and will examine the eye-ground pulse, etc., and should you find the pulse abnormally tense and the second sound abnormally accentuated, and if there is the slightest haziness about the retina or optic disc; or if there are white lines along the course of the retinal arteries even though there be no albumen in the urine, I would suggest the continued use of small doses of nitro-glycerine (call it trinitrine to patients) in $^1/_{150}$ to $^1/_{100}$ gr. three times daily until pregnancy is terminated if necessary. Likewise give a long course of it after pregnancy, should it be indicated. Bichloride of gold might be used instead of nitro-glycerine. In using either remedy it will be necessary to give mild cathartics to keep the bowels open, as either of these remedies causes constipation by diminishing the peristaltic motion of the bowels. Should the above doses not diminish the pulse tension, etc., it will be necessary to give a larger dose and more frequently repeated. I think $^1/_{100}$ to $^1/_{75}$ gr. three times daily sufficient if there be no albumen in urine. After a careful search of several hundred volumes on the subject, I have found but one author who advises nitro-glycerine as a prophylactic during pregnancy, and it appears in his case it was only used in advanced stages of

[8]London Lancet, 18/8.

pregnancy and where there was albumen in the urine. I refer to the paper of Dr. Fordyce Barker,[9] who says: "I think the evidence is conclusive that, by appropriate prophylactic treatment, the uræmia and albuminuria may be almost entirely averted. I will take this opportunity to speak of one agent which, I think, may prove of great value in the treatment of the uræmia of pregnancy, but which, so far as I have seen, has never been mentioned in this connection—and that is nitroglycerine in doses of $^1/_{100}$ to $^1/_{50}$ of a minim repeated every three or four hours. It effect is to speedily reduce arterial tension and allay spasm of the cerebral and renal arterioles, and thus indirectly increase the functional activity of the kidneys and marvelously quiet the nerve storm characteristic of these patients."

Would it not be well for family physicians who attend families whose members, or ancestors of, have had gout, rheumatism, dyspepsia, kidney disease, heart disease, etc., to instruct mothers that before their daughters enter upon matrimony they should be examined by a competent physician for any symptoms of incipient "contracted kidney," and also by an ophthalmologist, so that the prophylactic means may be used should it be required. Further I would recommend that country physicians be more particular to send cases to oculists for ophthalmoscopic examination and as soon as recognized.

Dr. A. W. H. Robson[10] recommends very highly nitro-glycerine in acute and chronic Bright's disease. In one case of acute Bright's disease he cites a short time after its exhibition the nitrogen in the urine increased from 150 to 250 grains. He makes no mention of its use in pregnancy. What is the use of draining the very lives out of patients, already greatly weakened by the poison in the system, by constantly giving them drastic purgatives, etc., to reduce the blood pressure, when it can be lowered by other and more powerful means, *i. e.*, nitroglycerine or bichloride of gold? Keep all knowledge from pa-

[9]Medical Record, 1888.

[10]British Medical Journal, 1881.

tients that would worry. Dr. Fordyce Barker[11] says, "Bright's disease has become so familiar to the public, as one which sooner or later must terminate fatally, that it inevitably depresses the patient, and especially carries terror to the minds of women during gestation, and to their friends." Nearly all oculists are agreed that the danger to the sight is greatly increased should the woman become pregnant the second time, having had retinitis or neuro-retinitis in the first pregnancy. The time-worn belief that if a woman had albuminuria in her first pregnancy, a subsequent pregnancy would cure her of the albuminuria, has about passed away, since the pathology of kidney disease has been so thoroughly investigated. An organ that would suffer such severe inflammation or congestion in one pregnancy would be so weakened that it would almost certainly be similarly affected in a subsequent pregnancy, even if the disease had been caused by pressure of the gravid uterus on the renal vessels. Where albuminuria is due to valvular heart disease, the danger to life is much greater than in other forms. Digitalis, strophanthus, convallaria, tr. iron, etc., are given in this form. Bichloride of gold would be contra-indicated here. Some authors recommend nitro-glycerine in this form, where there is compensatory hypertrophy. For further information on the use of nitro-glycerine, I will refer my readers to Dr. A. W. M. Robson's excellent artical on "Nitro-Glycerine" in the *British Medical Journal*, 1881. Robson was the first advocate of its use in Bright's disease, while the first, I belive, to advocate its use in America, and that of chloride of gold also, was Dr. Bartholow, who wrote an excellent article on its use in the *Boston Medical and Surgical Journal*, 1884.

NOTE.—A communication just received from Dr. Roberts Bartholow, the most eminent authority in this country on materia medica and therapeutics, says: "The chloride of gold and sodium can be given during pregnancy. If there be indications of abortion or premature labor, or any hæmorrhage, or labor has set in, nitro-glycerine will not do. It is true it is a

[11] Medical Record, 1888.

powerful means of averting heart failure from any cause. In advising its use you should append the caution to be observed on these points." A point to remember in the administration of nitro-glycerine or bichloride of gold is that it may cause amenorrhœa when administered to non-pregnant women during or just before menstruation, hence they should be discontinued during, and for several days before, menstruation.

CASES OF ALBUMINURIC RETINITIS IN PREGNANCY, AND BY WHOM REPORTED.

BLINDNESS	PARTIAL RECOVERY OF SIGHT.	RECOVERY OF SIGHT.
Cases reported in the AMERICAN JOURNAL OF OPHTHALMOLOGY, May, 1894 9	Cases reported in May, 1894 21	Cases reported in May, 1894 6
Lawson 1	R. Lee 1	Lee 1
—	Loring (New York) . . 1	Brecht (Berlin) . . . 1
Total 10	W. Cheatham, (Louisville, Ky.) 1	—
23.33%	A. Alt (St. Louis) . . . 1	Total 8
	—	18.54%
	Total 25	
	58.25%	

Besides the journals enumerated in my article in the May number of the AMERICAN JOURNAL OF OPHTHALMOLOGY, I made a thorough search of the following: *Philadelphia Medical Times, Cincinnati Lancet-Clinic, Boston Medical and Surgical Journal, New York Medical Journal, American Journal of Medical Sciences, Braithwaite, Archives of Ophthalmology and Otology, Transactions of the International Medical Congress, Receuil d' Ophtalmologie*, etc.

Since closing the above article, I find that I neglected to

add several very important suggestions from Dr. Edward Loring,[12] who says: "I would conclude, first, that examinations as to the condition of the eyes of pregnant women should be made much more frequently than they now are, and that these should be made in a routine manner, even when the patient does not complain of any unusual disturbance, since it has been discovered that about one-third, or thirty-three per cent. of those who have an organic lesion of the retina or optic nerve from kidney trouble either have none or make no complaint of any reduction of vision. Thus a retinitis or neuro-retinitis, which in its primary stage may exist and often does for months unsuspected by either the patient or physician, may lead after a long interval, through the secondary or atrophic state to complete blindness. Mr. Eales reports that a single physician was able to furnish him for examination from a single hospital in Birmingham twenty-eight cases of neuro-retinal disease from kidney trouble in one year, while out of eleven thousand cases of general eye disease at the Eye Infirmary only four such were seen."

[12]Premature Delivery for the Prevention of Blindness, in the Transactions of the American Ophthalmological Society, 1882.

SOCIETY PROCEEDINGS.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

May 1894 at Washington, D. C.

The meeting was called to order by the President, Dr. George C. Harlan, of Philadelphia.

The first paper announced was by Dr. E. E. Holt, entitled "*Removal of Steel from Vitreous*," which was read by title.

The next paper announced was, "*Recent Experiments in the Treatment of Detatchment of the Retina.*"[1]

Dr. Samuel Theobald, of Baltimore.—Mr. President, I should like to ask Dr. Bull how he makes the puncture in the sclera; what knife he uses?

Dr. Bull.—I always use the narrow knife of von Græfe, making the puncture of the sclera in the quadrant corresponding to the detachment; always making a wound through the conjunctiva at some distance from the point I desire to reach and separating that until I get at the proper place. I have not found it necessary to induce the conjunctiva to separate.(?) The edges coapt themselves without any binding suture.

Dr. Theobald.—Did Dr. Bull make the puncture only to the extent of the knifeblade?

Dr. Bull.—I always enlarge it, making a wound two and one-half to three millimetres in length.

As to Schölers' operation, which Dr. Risley just now asked me about, it consists in making a puncture through the coats of the eyeball into the vitreous chamber and injecting from two to six drops of the tincture of iodine slowly and awaiting the results which he hopes to be induced, by the in-

[1]No abstract of this paper was obtained.

flammation to be set up, in the vitreous chamber. Three years ago I reported to this society a series of five cases in which I had performed that operation with the most lamentable results. The experience then had proved to me that the method recommended by Schöler should be positively abolished.

DR. G E. DE SCHWEINITZ, of Philadelphia.—Mr. President, I have listened with great pleasure to the very interesting paper of Dr. Bull because I had the opportunity of seeing a considerable number of these operations in the Philadelphia Pauper Hospital. I have seen a good many cases of detachment of the retina and my experience coincides exactly with Dr. Bull that there is nothing quite equal to rest in the care and treatment of those cases. I published a number of my cases some time ago in which the operations were unsatisfactory. I had the opportunity of following these cases for a long time and have kept a record with regard to the field of vision in each. I would like to call the attention of the gentlemen present to the medical treatment; to add one observation to that of Dr. Bull; that is, that in addition to the rest cure, the putting to bed, the bandage and atropine, instead of pilocarpine the use of salicylic acid should be substituted. I am aware that this is not entirely a novel suggestion, especially abroad where much has already been written upon the subject. I was led to particularly use it by the results found by my friend, Dr. George Dexter (?) of the University of Michigan, in the treatment of pleural effusions. I do not know that this is any bet ter than pilocarpine in physiological action so far as the absorption of the fluid is concerned, but my experience in old people with cardiac disease is that of Dr. Bull's that pilocarpine acts badly while salicylic acid or salicyliate of sodium does not have this bad effect, but it does have some influence in causing the absorption of the fluid. I have not used it to the exclusion of putting the patient in bed, so that I do not know its exact relation and value proportionately, but the fact remains that it seems to have some extraordinary power in absorption. I have never seen a retina replace itself, but I have seen the field of vision improve very remarkably especially in

old people by reason of the use of this drug. I presume all the gentlemen present are acquainted with the many papers which have already been published abroad with regard to it. Its effects in pleural effusions have been most remarkable. I simply desired to bring this suggestion to the attention of the members of this society.

The next paper announced was "*Two Cases of Sympathetic Inflammation*," by Dr. F. M. Wilson.

At the close of Dr. Wilson's paper, the following physicians were invited to be present at the sessions of the society and to participate in the discussions of the papers read: Dr. George Gould, of Philadelphia, Dr. Allen, of Pittsburg, Dr. Reik, of Baltimore, Dr. Anton Coe, of Washington, Dr. A. E. Adams, of Newburg.

The next paper announced was "*Two Recent Magnet Operations; one an ideal success, the other a total failure.*" by Dr. H. Knapp, of New York.

DR. KNAPP reported two cases of magnet operation. In the first which he saw eight hours after the injury, the foreign body could be seen as an air bubble with the ophthalmoscope. One day of rest cleared the eye in such a way that the patient refused to have the foreign body, which stuck in the retina, extracted. Two days later, however, the eye began to inflame and he asked for the operation. The incision was made obliquely through the sclerotic near the foreign body. The foreign body was extracted by the first introduction of the tip of the magnet. Recovery quick and undisturbed.

In the second case, where the injury had occurred six weeks previously, the foreign body could not be seen, the vitreous being cloudy. Repeated introductions of the magnet failed. The eye was enucleated at once, however, but the foreign body could not by any means be discovered, Dr. Knapp, to illustrate a possibility that it might have pierced the posterior wall of the eye showed an eyeball recently removed where a chip of iron stuck in the posterior part of the sclerotic, its point being distinctly felt and seen. Dr. Knapp spoke of the statistics published by Hirschberg and Hildebrand (Mayweg) which

showed 15 and 31% of good results having been obtained from the extraction of foreighn bodies with the magnet introduced into the vitreous. He said that his experience from cases that had remained under observation longer was by no means as favorable. In fact, the permantently successful cases were exceptional. As to the operation, he recommended a wound obliquely through the sclerotic because by being closed through the intraocular pressure, it favors immediate union. Further, he recommends the use of a sterilized platinum wire for holding the wound sufficiently open to keep the foreign from being stripped from the magnet by the edges of the wound.

DR. KNAPP mentioned the experiments of Dr. Haab, of Zürich which were confirmed by Dr. Schlosser according to the reports at the last two meetings of the German Ophthalmological Society. They consisted in drawing iron or steel fragments from the depth of the eye through the vitreous and even through the lens into the anterior chamber by means of putting the eye into contact with a broad electrode of a very strong magnet (Rumkorff coil). From the anterior chamber their extraction was easy. These astonshing facts should be tested in suitable cases as well as experimentally.

DR. W. E. LAMBERT, of New York.—Mr. President: I would like to mention a complication which happened in a magnet operation which I know of and I would like to know if any of the members present have had experiences of a similar nature. In this instance, the patient had the lens punctured by a piece of steel. A portion of this was left in the anterior chamber and a portion in the lens. The iris hung on to the piece in the chamber and after the incision was made in the cornea and the magnet introduced I could not succeed in drawing it out. Finally, I had to do an iridectomy. In performing this, the steel was pulled out of the lens but fell into the anterior chamber. There was an immediate hæmorrhage from the iris which filled the anterior chamber. This, of course, was very annoying because it is very hard to get rid of the hæmorrhage in the anterior chamber and I thought all my work was

ruined for the time being. I introduced the magnet to search again but the hæmorrhage clotted immediately. I then fancied I was in a worse position then before. I was entirely mistaken. This proved to be my salvation, for I could push the clot aside and leave a clear space, which I did by using the iris forceps. After introducing the magnet again, a little piece of steel flew out and became attached to the magnet and I succeeded in getting it out with the aid of the forceps. This clotting of blood was a complication which I had never seen before.

DR. W. S. BENNETT, of New York.—I would like to ask, Mr. President, about the coil of wire spoken of by Dr. Knapp?

DR. H. KNAPP, of New York.—The eye was attached to the broad end of a Rumkorff coil. The eye was attached so that the full force of the coil was obtained and this was done only with the idea of drawing the steel where I could extract it afterwards in some other way.

DR. JOHN GREEN, of St Louis.—Allusion has been made to the foreign body being frequently rolled off in the cut at withdrawal through the scleral wound. Most electro-magnets in the market have a tip which is nearly cylindrical or slightly conical in form. My colleague, Dr. Ewing, of St. Louis, some years ago, had an electro-magnet made, the pole of the magnet being different from the ordinary conical form; in two or three cases they were made flat. Quite large chips of steel have from time to time been succesfully removed with very little of that tendency to rub off the piece of steel at the moment of exit. I think tips of that form have a very decided advantage in very many cases over the ordinary conical tip of sectional cross section, such as is ordinarily provided by the instrument makers.

DR. H. KNAPP, of New York.—Mr. President; Just one word in concluding this discussion. Dr. Green mentioned a flattened tip for the electro-magnet. This, I think, an extremely good thing. Such a platinum tip has been used in my practice partially in withdrawing a piece of steel but principally in getting loose foreign bodies which are embedded in the iris, which are seen very infrequently and when we

introduce the flat electrode, the wound of the cornea need not be so large and we can pass it more easily through the wound and through the anterior chamber between the iris and the cornea itself, the anterior chamber being, of course, empty. This is certainly true also; but he mentions another advantage. He says that such an electrode is able in some cases to tear the foreign body loose from its connective tissues and attachments to the iris. Foreign bodies, being aseptic can lie in the iris an indefinite length of time; on the other hand, such bodies may give rise to trouble at any moment. They are more or less firmly attached to the iris and a magnet introduced just where the steel is can loosen it by lateral movements.

The next paper read was, "*Foreign Bodies in the Orbital Cavity*," by Dr. W. B. Johnson, of Patterson, N. J. (See June No., this Journal).

The following gentlemen were, on motion, invited to take seats with the Society and participate in the discussions:

Dr. H. O. Wright, of Boston, Dr. Thomas D. Coleman of Augusta, Ga. and Dr. Aikin, Savannah.

DR. H. KNAPP, of New York.—Mr. President: Eoreign bodies in the orbit are sometimes very difficult to deal with, both as to diagnosis and treatment. A few months ago I was called by a surgeon in consultation to see a boy who had been wounded by a No. 22 birdshot, which had entered the upper inner corner of the orbit. The eye did not move upwards and the upper part of the orbit was hard, evidently filled with blood. As we could not locate the body we agreed that the most advisable course to pursue was to wait. This course was followed, and the boy who had had complete ptosis recovered the mobility of his eye to a certain degree. When I first saw the patient immediately after the injury there was a good deal of blood in the interior of the eye, in the inner upper part the retina was raised, apparently detached; lower down, I could not see the fundus clearly. I thought that this was simply owing to the foreign body having struck the eye on the posterior part outside and producing hæmorrhage inside. It is now some

two months since the accident occurred. Now the interior of the eye has cleared up and in the inner, upper part there is a long scar about five or six diameters of the optic disc and around it a good deal of black pigment. Below the optic disc there is a hemispherical elevation of two disc diameters in breadth and three in length. Its crest can be seen sharply with strong convex lenses. The retina covers this foreign body without any movement and the surface of the elevation is slightly striated and is grayish white. From all this I could only conclude that the bullet had not merely struck the sclerotic, but had pierced the eye and is now fastened at the background in the lower part, causing no irritation. The fourth case mentioned by Dr. Johnson, reminded me of this case.

DR. W. B. JOHNSON, of Paterson, N. J.—Mr. President: I remember a case in which a shot from a shotgun—birdshot—passed entirely through the eyeball. I think I reported that case with 13 or 14 other cases in Milwaukee last year under the title of "Quiescent Foreign Bodies." That birdshot, however, passed entirely *through* the eye and there was a subsequent return of normal vision in that eye, although the shot passed just without the limbus in the ciliary region and the point of location at which the shot passed out of the eye could also be located.

It became a foreign body in the orbit and became encysted there, I suppose. There was no further trouble and the vision became normal. I think these are very interesting cases. Fortunately we do not see very many of them and I think it is a very good thing that we don't, although the orbital contents certainly in a great many instances are able to withstand a great deal of injury and come out of it in very good shape. Case No. 2, however, in which the foreign body penetrated the cerebral cavity was very serious.

DR. THEOBALD reported several cases of "*Subnormal Accommodative Power.*" In 1891 he had presented a paper to the Ophthalmological Society entitled "Subnormal Accommodative Power a Not Infrequent Cause of Asthenopia in Young

Persons," by which was meant persons under the presbyopic age. The doctrine of subnormal accommodative power, as set forth in his previous paper, was based upon the observation that in eyes, in every respect normal, the vertical diplopia test should show orthophoria at 20′, but exophoria of from 3° to 5° at the reading distance, or put in other words, the vertical diplopia test at 13″ should give, as compared with the test at 20′, a difference in favor of the external recti muscles of from 3° to 5°. When this is not the case subnormal accommodative power (due to a weak ciliary muscle or an inelastic unresponsive lens), must be assumed to be present. This condition may exist apart from refraction or other muscular errors or may be associated with them. Its existence in emmetropia calls for convex glasses for near vision only; in hypermetropia for stronger glasses for near vision than those which would be prescribed simply for the correction of the hypermetropia, and in myopia for weaker concave glasses for near vision, than would otherwise be indicated.

The most striking of the cases reported was that of a young woman twenty-three years of age, with less than .25D. of manifest hypermetropia, and with not .50D. evident to the ophthalmoscope, who derived complete relief from marked asthenopia and persistent headaches by wearing in near vision + 2. s. glasses decentered outward. The diagnosis of subnormal accommodation in this case was based upon the fact that, while the vertical diplopia test revealed at 20′ esophoria of only 2° to 3°, the same test showed at 13″ esophoria varying from 8° to 22°. With the glasses as prescribed (+ 2. s. decentered outward) this high degree of esophoria at 13″ gave place to orthophoria.

DR. THEOBALD reported a case of "*Panophthalmitis Suppurativa Following Discission of a Capsular Opacity*," in a negro boy, who was probably the subject of inherited syphilis. (See this journal).

Absolute asepsis in eye operations, he thought, was not attainable, but, on the other hand, Nature helps us with our eye surgery. The conjunctival sac is not a favorable field for the

development of pyogenic organisms, and, in consequence, suppuration rarely occurs, notwithstanding our imperfect antiseptic measures.

Careful antiseptic precautions, including sterilization of the instruments employed, were practiced in the case reported, yet the whole cornea sloughed and the eye was practically destroyed within forty-eight hours after the discission (a smooth and satisfactory operation was performed). The lessened resisting power of the cells and fluids of the body, due to the inherited syphilis, was thought to be a factor in bringing about the unfavorable result and the possibility of auto-infection was mentioned.

DR. THEOBALD reported a case intending to show that the ophthalmoscope, at times, fails to reveal latent hypermetropia. As a rule, in expert hands, he thought all, or nearly all, of the hypermetropia could be detected by the ophthalmoscope without the employment of a mydriatic; but there are marked exceptions to this rule.

The case reported was that of a lad nine years of age, with asthenopia and miliary choroido-retinitis. Only 1. D. of hypermetropia was revealed by the ophthalmoscope in the right eye and slightly more than this in the left eye, yet a mydriatic showed 4. D. in the right eye and 5 in the left, with slight additional astigmatism in each.

DR. GEO. W. HALE read a paper entitled "*Muscular Asthenopia.*" He took the position that the cause of muscular asthenopia was almost always central rather than peripheral, citing several well known conditions of the eyes as proofs of the above.

He did not believe that the relation between accommodation and convergence were fixed and unchangeable. If they can be separated all our cases of exophoria, which he believes to be the chief cause of muscular asthenopia, should be amenable to treatment.

The carrying of the weighted convergence stimulus from the punctum proximum to infinity, is practically an infallible cure for all such cases.

DR. G. C. HARLAN reported "*Three Cases of Malignant Tumor of the Orbit.*"

CASE I.—Epithelial orbital tumor originating in the lachrymal sac; rapid recurrence. The patient was a farmer, forty-eight years of age, in good general health. His attention had been first called to the right eye, eight months before his admission to the hospital, by an overflow of tears. Afterwards there was a good deal of pain in the eye and temple and the lower lid commenced to swell. The lower lid was protruded and the eye was pushed upward and outward by a tumor which reached from the inner canthus to the junction of the middle and outer thirds of the lid, overlapped the orbital margin and extended back into the orbit on the lower and inner side of the ball. It was entirely beneath the conjunctiva, which was not involved, and was solid and very hard to the touch. The nasal sinuses were free from disease. The eye suffered only from pressure and V.=$^{15}/_{cc}$.

The tumor was removed through a free incision in the lid without disturbing the eyeball. It was as large as a small hen's egg, was firmly adherent at the lachrymal groove and extended, along the floor and inner wall of the orbit, nearly to the optic foramen.

Microscopic examination proved the growth to be an undoubted epithelioma.

Three months later there was no exophthalmos and vision had increased to $^{15}/_{XL}$, but a hard mass of considerable size could be felt at the inner canthus and extending back into the orbit in the position of the former tumor. The whole contents of the orbit were now removed. There was extensive distension of the walls of the lachrymal groove making an opening large enough to admit the end of the little finger.

CASE II was a large round-celled sarcoma originating in the capsule of Tenon and completely filling the orbital cavity. The patient, a laborer, fifty-two years of age, had suffered no inconvenience until three months before the operation.

CASE III was one of small round-celled sarcoma of the orbit, rapidly recurring and attaining an enormous size, in a

child nine years of age. The disease commenced in August and the contents of the orbit were removed in November. The growth recurred in December and increased with great rapidity until it was more than half as large as the child's head. There were no cerebral symptoms and no pain. Death occurred from exhaustion in April. The eyeball was not involved in the disease but was destroyed by pressure. At the time of the operation there was no communication with the neighboring cavities but the growth subsequently invaded the nasal sinuses and the cranial cavity.

DR. A. A. G. HEYL, of Philadelphia.—I would like to say a word or two with reference to aniline dyes in the treatment of epithelioma. In Germany the aniline dyes have been used in subcutaneous injections and I have under my care at present a case which I will here mention. It came to me with the following history: Seven years ago a small scab appeared near the external canthus. It was removed by a surgeon, but the wound never perfectly healed. Two months ago there was a large ulcer with profuse granulations near the outer canthus, The cornea was destroyed and a subcutaneous brawny swelling clear out to the temple existed. To have attempted to remove or dislodge the tissue would have required an area as large as the palm of my hand with every chance of making matters much worse. I gave the patient a simple wash of yellow pyoktanin, and was surprised at the end of three weeks to find that the brawny swelling about the ulcer was disappearing. The case has continued to grow better until at the present time, the ulcer is closing up and, it may be possible to do something by operative measures. I have treated another case of epithelioma with this same lotion with a little benefit or with nothing like the benefit in this present case The case I have in mind is one where the lid has been partially destroyed and the tissues below the lower lid encroached upon by the ulceration. The two cases were microscopically dissimilar. The case benefited by the pyoktanin was characterized by exuberant granulations on the ulcer and brawny subcutaneous swelling. In the case not benefited the surface of

the ulcer was smooth and depressed below the skin surface with little brawny infiltrations about its edges. Possibly the great uncleanliness of this patient along with alcoholism may have interfered with the action of the drug.

I speak of these cases to call attention to the use of aniline dyes as a palliative of some value in this disease.

DR. B. ALEXANDER RANDALL, of Philadelphia.—I was of the opinion that the aniline dyes might possibly be of some value, in combating neoplasms so I used them in some epitheliomatous conditions. But any predilection I might have had in their favor was dashed the other day by the reappearance at my clinic of a patient with epithelioma of the auricle. I thought I had completely curetted away the growth, when it was recent and small, as well as dressed freely with pyoktanin, but the man reappeared some six months later—perhaps a year later—with a much more extensive greater recurrence. This was again removed and the surgical intervention may result in permanent success.

DR. R. A. REEVE, of Toronto, Ont.—Mr. President: I would like to mention a case of orbital sarcoma unconnected with the eyeball primarily, which was under my care some years ago and in which case I photographed the tumor. This was 21 inches in circumference, weighed 23 ounces and was removed simply to relieve the child from the effects of the weight and distress.

DR. W. B. JOHNSON of Paterson, N. J.—Mr. President: In conjunction with the injections mentioned in sarcomatous disease, I have had some little experience with the toxic products of erysipelas and while I cannot say anything in its favor as being effective in these scarcomata of the orbit, I have had one case of sarcoma of the pharynx where the cicatricial bands choked or destroyed the sarcomatous tissue to a very great extent. I had some little experience with the toxic products of erysipelas also in connection with Dr. Cooley and treated a case in my city which, however, resulted unfavorably. It was a case of sarcoma involving the temporal bone, extending to the dura. But I would like to say here that I think that in

view of the fact that there certainly have been cases of sarcomatous disease which have been alleviated by the use of the injections of the toxic products of erysipelas, it is a desirable thing that it should be further tried, especially should further trial be made upon those of inoperable sarcoma where anything would be better than nothing.

DR. SWAN M BURNETT, of Washington, D. C, read a paper entitled, "*Tumor of the Intervaginal Space of the Optic Nerve Sheath.*"

The patient was a boy of seven years who had a left exophthalmus of three years' standing, and of slow and painless growth. The posterior wall of the globe was on a level with the bridge of the nose. Movements somewhat restricted but about equally in all directions. Proptosis directly forward; vision gone; nerve head white, retinal veins enlarged and tortuous; eye otherwise healthy. The impaired vision (fingers at three feet) and slight exophthalmus first noticed after an attack of *la grippe*. A large, rather soft mass was found occupying the apex of the orbit and the optic nerve, very much enlarged, passed into it. The eye and the nerve attached to it were removed after cutting the nerve close to the large mass. The latter was then taken out through the opening in the conjunctiva. The large tumor measured 35×25×15 mm. after hardening in absolute alcohol. In shape it corresponded to the apex of the orbit at that locality. The tumor around the optic nerve reached up to the lamina cribrosa and was confined strictly to the intervaginal space, neither the dural nor the pial sheaths being affected. The structure of the tumor was not uniform and consisted of long fibers which were usually nucleated at some part of their course, shorter fibers which were reduced in the larger tumor to nucleated spindle cells, hyaline plaques most numerous in the large tumor, and nests of large oval cells with nuclei which were also most plentiful in the large tumor. This larger (older ?) mass was also denser and more vascular than the portion nearer the optic nerve entrance, and the walls of the vessels were frequently hyaline.

A year after removal the boy was in better health than be-

fore and there are no signs of a recurrence. From a study of the literature of these tumors around the optic nerve the author is led to regard them all of essentially the same nature, the difference in the appearance as they have been described, being due to the state of growth or degeneration at which they were moved and examined. They are not malignant, certainly not those which originate, as with rare exceptions they all do, from the intervaginal space, and he is inclined to believe they are embryonal in their character.

DR. KNAPP, of New York.—Mr. President: I would like to make a few remarks with regard to three cases mentioned by Dr. Harlan, with regard to sarcoma of the orbit. These tumors may originate in the adjacent cavities, especially when they produce exophthalmos. I was very much puzzled by a case similar to the one of Dr. Harlan's the winter before last where a child of healthy parents developed an exophthalmos within two or three days. The upper lid was somewhat swollen and the eye pushed almost straight forward, but on the firmest pressure I could not detect any tumor. In a week the exophthalmos was very much greater and a distinct tumor was felt on the inner upper side of the orbit. This tumor could not be anything but a sarcoma and I advised removal which was done immediately afterward, but there was a defect in the upper inner part of the orbital wall and the tumor rapidly returned. Springing from the ethmoidal or sphenoidal cells I have seen a number of cases. They produce exophthalmos, which is rapidly progressive as soon as they pierce the orbitl wall. The accessory cavities of the orbit and of the nose are a much more frequently the origin of orbital disease than we suppose. The greater my experience becomes, the more convinced I amof this.

DR. C. S. BULL, of New York.—Mr. President: My opinion, which has been gradually developed from my experience in almost all the cases of orbital tumor in which there is a very rapid increase of the exophthalmos, is, that the origin of the trouble is either in the ethmoid or sphenoidal sinuses. That is the result of my experience in post-mortem examinations

and clinical observations. While, as surgeons, we are justified I think in doing everything we can to relieve the unpleasant symptoms, particularly that of pain, yet I think it is our duty to tell our patients where we have formed an opinion as to the origin of these tumors, even in case where an operation has not yet been done, not in the cases of relapsing tumors but in original tumors, that the seat of the disease is so deep that no favorable result can be expected; that, even, if we remove the portions in the orbit, the growth will return because of the location of the original tumor and that the life of that patient is inevitably shortened by operative procedure directed toward the removal of the tumor. Furthermore, that in a relapsing tumor the removal of the growth materially and rapidly shortens the life of the patient. If these facts are stated to the patient and his family and they are willing to accept the issue, it is probably our duty to operate, but in my opinion not otherwise.

DR. H. KNAPP, of New York.—Mr. President: I would like to touch upon the last part of Dr. Burnett's paper, that is, the removal of the outer wall of the orbit the osteo-plastic method according to Krönlein.

DR. FREDERIC LANGE, of New York removed an orbital tumor about two years ago. There has been no recurrence and there is scarcely a scar. I am, therefore, rather inclined to believe that this modern procedure of thorough surgery should not be ignored by oculists.

One word with reference to the preservation of the eye in the removal of tumors of the optic nerve. I think I was the first to attempt and perform this operation. It was twenty years ago in a case of endothelioma of the sheath of the optic nerve, published in *Archives of Ophthalmology and Otology*, Vol. iv p. 323, 1874. I desire to say that I saw this patient again about a month ago and that there has been no recurrence and the patient has had no evidence of any metastatic tumor. The eyeball is there well, but shrunken, certainly not so nice as an artificial eye would be, but nevertheless the operation has not given the woman any discomfort.

DR. J. A. LIPPINCOTT, of Pittsburg.—Inquired if such apparently simple tumors cannot assume a malignant character?

DR. BURNETT.—In looking over the statistics prepared by Braunschweig, so far as they can be relied upon, I find that there are very few cases, indeed, in which there seems to be any tendency to malignancy. Of course, one could hardly say that all tumors of the optic nerve are benign, but the cases which are reported as typical cases of myxo-sarcoma and sarcoma, which take their origin in the intravaginal space, from what I have been able to study of them, were not malignant.

DR. J. A. LIPPINCOTT, reported a case of *"Excessive loss of Vitreous in Cataract Extraction.—Recovery.*

W. H. S., age 31, L. E. totally blind from injury in childhood. On making the corneal incision in right eye the vitreous began to ooze out almost imperceptibly at first, because the fluid was so watery. The eyeball gradually collapsed, deep wrinkles showing themselves in the sclera. After the removal of the lens which was accomplished by means of a spoon, leaving a tough capsule behind, the globe did not look any larger than the end of an average sized finger. The case seemed hopeless, but the eye filled up and in four weeks fingers could be counted. The patient had several attacks of iritis, as a result of which the iris became adherent to the capsule. Four moths after the operation vision corrected was $^{15}/_{c}$ and improving constantly.

DR. C. F. CLARK, of Columbus, Ohio, read a paper entitled *"A Modification of the Operation for Canthoplasty."*

A case of entropion of high degree, with narrowing of the palpebral fissure following many years of neglected trachoma, reported to me some months ago at St. Francis Hospital. She had been operated upon for entropion some ten years before.

The left eye was defective from pannus while the right was practically useless, I operated upon the upper and lower lids of one eye, doing an entropion operation and a canthoplasty at the same time. This was followed in a short time by a similar operation upon the other eye.

Improvement of vision resulted in the left eye and restoration of the ciliary margins to a better position.

The lashes of the right again turned in and after a few weeks it became apparent that the cicatricial contraction at the outer canthus was sufficient to render her condition at this point as bad as before.

I undertook to transplant a spear-head shaped flap of integument from the temple to fill the gap created by division at the external canthus.

The inter-tarsal ligament and the tarsal ligaments were divided as was also the conjunctiva from the external canthus inward, for a distance of about six to eight millimeters.

From the outer extremity of this incision, that is from the junction of conjunctiva with the skin at the external canthus two incisions six to seven millimeters long were made in the skin at an angle of about eighty degrees with one another. At their outer extremities they were turned at an angle and continued in curved lines for about twelve millimeters to complete the fingure of a spear head the shaft of which consisted of a strip of skin about three millimeters wide.

Two additional sutures at the points occupied by the angles uniting these points to the narrow portion of the flap at the neck of the spear-head gave security against retraction by contraction of the flap in its long axis.

After doing in addition to the above an entropion operation, on the upper lid, I applied an antiseptic dressing which was renewed after two or three days.

The eye gradually cleared and vision was soon sufficient to allow the patient to go about the ward, by the aid of this eye alone.

In reviewing to some extent the literature of the subject, I found that others had attempted to obtain relief for blepharophimosis, in a manner very similar to that which I have described.

DR. G. E. DE SCHWEINITZ, of Philadelphia, described a case of "*Epithelioma of the Lower Lid*," removed from a woman, aged 40, a portion of the gap after excision having been filled in

with a piece of integument taken from the thigh, so cut as to include only the skin and none of the subcutaneous fat. One year later this flap was firmly incorporated with the surrounding tissues, from which it was distinguishable by its slightly paler color. It had shrunk about one-third of its original size, but had accomplished the purpose for which it was inserted, as the lid was accurately in place and there was no ectropion. Photographs illustrating the condition were exhibited.

DR G. E. DE SCHWEINITZ, also demonstrated the microscopic specimens of a small tumor of the lid which had been removed from a man, aged 40, the clinical characteristics of which were exactly those of an ulcerated meibomian cyst. The sections, however, showed the growth to be a glandular carcinoma. He referred to similar instances which had been recorded by Fuchs, Sourdille, and other authors.

He also described two cases of "*Monocular Diplopia.*" The first was a man, aged 47, who had sustained a severe injury of the head, in a railroad accident, and presented the clinical symptoms of traumatic neurasthenia. The eyes, with the exception of the monocular diplopia, were normal. In the second case this character of diplopia was found in a woman suffering from organic cord disease, but who presented also numerous hysterical stigmata. Both eyes were highly astigmatic, and in each there were small patches of macular choroiditis.

DR. DE SCHWEINITZ, of Philadelphia, presented an abstract of a research by Dr. Emil A. de Schweinitz, of the Bio-Chemic Laboratory of the Department of Agriculture in Washington, to test the value of tri-kresol as a disinfectant, in the preparation of collyria, as well as its action upon the human and animal eye. Dr. E. A. de Schweinitz has demonstrated that tri-kresol solution, 1–1000, may be dropped into a rabbit's eye and also injected into the anterior chamber without causing lesions visible to ordinary examination. Atropine, cocaine and eserine solutions made up with tri-kresol water as a solvent remain sterile, although placed in bottles without special precaution. Bipettes wrinsed with solutions of tri-kresol, 1–1000, and allowed to lie in wide, open-mouthed bottles for some

time, also remain sterile. Tri-kresol dropped into a human eye in the strength of 1-1000 produced no irritation. Dr. E. A. de Schweinity suggests that the alkaloids commonly used in ophthalmic practice should be dissolved in tri-kresol water 1-1000, and that the pipettes should be wrinsed in the same solution after use. In collyria thus prepared and standing for three months, no growth, fungous or otherwise, is apparent, and none appears upon culture media.

DR. G. E. DE SCHWEINITZ, of Philadelphia, describes two cases of macular disease, illustrated by water colors, characterized by symmetrical lesions of variously shaped, chiefly roundish bodies resembling small masses of boiled sago or tapioca, of a yellowish white or reddish-yellow tint. These bodies were so related one to the other that they presented somewhat the mulberry appearance of the so-called hyaline or colloid out growths in the optic papilla, although the bluish-gray tint of the latter lesion was not present in this macular deposit.

Dr. de Schweinitz compared these appearances to to the varicosities of the choroid described by De Wecker and Masselon, the central guttate choroiditis figured by Nettleship, and some of the types of degeneration of the macula which have been recorded by Nagel under the name of hyaline growths and crystalline deposits on the inner surface of the choroid. Both of the patients were young women under thirty years of age, and the macular disease produced no disturbance of vision The one patient was healthy, with the exception of atonic amenorrhea; the other was the suject of chronic Bright's disease. Dr. de Schweinitz reiterated his belief that the colloid excrescences of the lamina vitrea and the so-called "drusen," in the nervehead were not identical lesions.

[TO BE CONTINUED.]